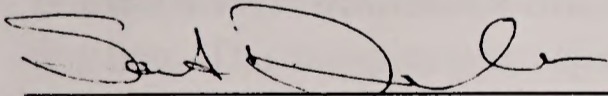


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**Taos Field Office**

**Riparian and Aquatic Habitat Management Plan  
and  
Environmental Impact Statement**

Record of Decision

 10/23/2000

for / Ron Huntsinger  
Field Office Manager

Date

Prepared by:  
U.S. Department of the Interior  
Bureau of Land Management  
Taos Field Office  
New Mexico

## DECISION

To meet the ongoing need for long-term stewardship of riparian habitats, the Taos Field Office will adopt the Preferred Alternative, described as Adaptive Management, in the *Taos Riparian and Aquatic Proposed Habitat Management Plan (HMP) and Final Environmental Impact Statement (FEIS)*. The Preferred Alternative includes an HMP that provides specific direction for restoring and protecting identified riparian habitats on lands under the jurisdiction of the Bureau of Land Management (BLM) in the Taos Field Office. In addition, the HMP guidance will be applied to riparian habitats under BLM jurisdiction that are subsequently identified by the Taos Field Office.

For over a decade, BLM has emphasized the restoration and protection of riparian areas for the benefit of ecosystem and watershed integrity, unique plant associations, threatened and endangered species, and other riparian-dependent species in New Mexico. Although much has been accomplished to meet BLM goals for riparian area improvement, much more remains to be done. For example, new data on the current condition of riparian habitats need to be obtained and utilized in riparian management. A process for obtaining such data and using it to develop management actions is presented in the HMP. The HMP also gives the public a set of published goals and objectives that the Taos Field Office will use to develop future management actions and to judge the success of riparian stewardship.

## ALTERNATIVES

Three alternatives were presented in the *Draft Environmental Impact Statement for Riparian and Aquatic Habitat Management in the Taos Field Office - New Mexico (DEIS)*: (1) Current Management, (2) Adaptive Management, and (3) Grazing Management. While all alternatives followed current regulatory and legal requirements and BLM policy guidance, each alternative provided a different approach, management strategy and set of implementation procedures for achieving riparian habitat stewardship. As a set, the three alternatives also addressed technical and policy issues developed in public scoping.

Under the Current Management Alternative (No Action Alternative), the Taos Field Office would continue to manage riparian areas in accordance with applicable BLM guidance, with the objective of protecting and restoring them in conjunction with other authorized land management activities. This alternative is considered equivalent to the No Action Alternative required by NEPA analysis. Current management has already resulted in the improvement of some riparian areas by restricting domestic livestock use either completely or during the growing season, as well as by implementing other management practices.

The current plans and activities derive from those aspects of BLM policy and guidance for riparian-wetland area management that seek to protect riparian habitat from potential adverse effects

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from other authorized uses of the land. Within the Taos Field Office, the policy and guidance is usually applied in the form of stipulations or conditions of approval for other uses that are authorized for the public lands. For example, livestock grazing may be limited by location, season of use, or numbers of animals to protect riparian habitats; mineral developers may be precluded from locating facilities in or adjacent to riparian areas; utility rights-of-way permits may prescribe against any activities that would impair riparian function. In addition, authorization for other uses of the land may require actions such as water development, vegetation manipulation, or bank stabilization to protect or restore riparian habitats as a condition of approval. Finally, current management may also undertake actions specifically designed to protect or restore riparian habitats as a specific Taos Field Office initiative. For example, field inventories have been conducted to determine the condition of riparian habitats under the current budget priorities and staffing levels.

In the late 1980s, the Taos Field Office began to develop special management actions to maintain or restore riparian habitats. In addition, management plans have been developed that specifically pertain to the lands administered by the Taos Field Office. For example, fencing sensitive riparian areas to exclude domestic livestock grazing has been conducted over the past two years.

Under the Adaptive Management Alternative (the Preferred Alternative), the BLM would assign a high priority to implementing those management practices identified in current BLM management guidance to restore and protect all riparian habitats under BLM jurisdiction. For riparian areas, this alternative would require a specific focus on riparian management, and decisions regarding other land management activities would be constrained to limit or prevent adverse impact on riparian areas.

Application of the Adaptive Management Alternative (the Preferred Alternative) represents a proactive approach to plan and implement strategies for restoring and protecting riparian habitats on the basis of a set of activities intended to achieve measurable improvement of riparian habitat and function. The management actions would be implemented irrespective of other public land administrative actions or functions. Alternative 2 is based on the concept that riparian habitats are critical elements in the landscape and that specific management actions are necessary to enable them to function at their full potential. BLM policy, direction, and guidance are specifically formulated to accomplish this objective and prescribe a set of comprehensive practices for riparian-wetland management. Compared with the Current Management Alternative, the Adaptive Management Alternative seeks first to do what is necessary to ensure the restoration and protection of riparian areas and then to approve those other uses to the extent that they are compatible with the preservation of riparian resources.

Implementation of adaptive management practices would involve the following basic procedures:

- (1) Survey and analyze riparian conditions,
- (2) Use survey results to describe a desired future condition and identify appropriate management actions,
- (3) Implement management actions,
- (4) Monitor the success of the management actions, and
- (5) Modify the management actions, if necessary, on the basis of the monitoring results.

The ordered sequence of these procedures describes an adaptive management approach that provides a means to change management activities when monitoring data show that current actions are no longer required or when current actions are not resulting in achievement of a desired restoration or enhancement goal outlined in item 2 above. A guiding principle is that all information is collected and analyzed to judge success in achieving (1) the endpoints associated with proper functioning condition and (2) a desired vegetation composition and structure. It should be noted that when adaptive management practices are being implemented, the development of management actions is a decision outcome derived from the results of baseline riparian area surveys and analyses.

Under the Grazing Management Alternative, the BLM would exclude domestic livestock use in riparian areas by modifying grazing allotments to exclude such areas. For each allotment affected, this provision would include changing the description of the allotment, installing fences or other physical barriers to exclude livestock from riparian areas, and, if appropriate, adjusting the number of livestock permitted to use a modified allotment.

Many of the riparian areas under the management of the Taos Field Office are within grazing allotments, and grazing is currently allowed (managed or unmanaged) in a number of these areas. Under Alternative 3, the Taos Field Office would develop management actions that would exclude domestic livestock use from these riparian areas.

Following publication of the DEIS and analysis of all comments received, the Preferred Alternative was selected for implementation and is developed further in the FEIS. This alternative requires a specific focus on riparian management and stewardship such that authorizing decisions regarding other associated land management activities will be constrained to limit or prevent any adverse impact on riparian areas. The HMP component of the FEIS presents a set of actions,

procedures, goals and objectives, and monitoring activities that the Taos Field Office will use to implement the Preferred Alternative.

## **RATIONALE**

While each of the alternatives could be expected to accomplish the objective of protecting and restoring riparian habitats, the Preferred Alternative specifies adaptive management practices that incorporate technical survey and data collection protocols tailored to individual riparian areas. Adaptive management allows the Taos Field Office to implement actions on the basis of a clear set of measurable goals in which ongoing data collection is used to measure success in achieving the goals. Since riparian ecosystems are inherently dynamic (i.e., subject to change from year to year), adaptive management provides a process for adjusting decisions and actions to future riparian conditions. Compared with the other alternatives, the Adaptive Management Alternative is simultaneously more focused on achieving riparian habitat objectives and more flexible in identifying and responding to the need for change. In addition, the Preferred Alternative places riparian management on a priority basis that is not dependent on other field office program activities.

By comparison, the Current Management Alternative relies on accomplishing riparian habitat objectives through conditions placed on other authorized land uses. Since the Taos Field Office required new information on riparian conditions and a clear set of restoration goals and objectives, Current Management could result in an *ad hoc* set of riparian management actions that would be implemented in the context of other field office activities. Current management would, by default, continue the dependence of riparian management on the outcome of other field office authorizing activities.

The Grazing Management Alternative would categorically exclude domestic livestock grazing in all riparian areas, but would otherwise rely on continuation of current management to accomplish riparian management objectives. The Grazing Management Alternative is highly prescriptive and continues the dependence of riparian management and riparian restoration on the outcome of other field office actions.

## **PUBLIC COMMENTS ON THE PROPOSED PLAN**

The views of the public have been sought throughout the process of producing the Riparian and Aquatic Habitat Management Plan for the Taos Field Office. Public involvement was initiated and documented in detail during public scoping, including open meetings held early in the scoping process. Public scoping was followed by an open house and public hearing on the Draft Environmental Impact Statement. The Proposed Riparian and Aquatic Habitat Management and Final Environmental Impact Statement was made available to the public as a printed document, as a digital document (CD-ROM) and placed on the BLM/New Mexico web site at [www.nm.blm.gov](http://www.nm.blm.gov).

All individuals and organizations listed on the current Taos Field Office mailing list for this project have been sent a copy of the Record of Decision to complete the public involvement process. No comments were received on the Proposed Riparian and Aquatic Habitat Management and Final Environmental Impact Statement in the Taos Field Office-New Mexico.

## **SECTION 7 CONSULTATION UNDER THE ENDANGERED SPECIES ACT**

A letter of concurrence with the biological evaluation presented in the Final Environmental Impact Statement (Volume 1) was issued by the United States Fish and Wildlife Service (Service) on October 3, 2000. The BLM is committed to the following actions as agreed to in the Service letter dated October 3, 2000:

- Riparian vegetation monitoring summary reports will be provided to the Service annually after the data become available,
- The BLM will coordinate with the Service to ensure that potential southwestern willow flycatcher habitat is improved to a suitable condition and that suitable habitat is maintained, and
- The BLM will continue southwestern willow flycatcher surveys until the subspecies is delisted or the BLM receives concurrence from the Service that surveys are no longer necessary.

## **MITIGATION**

The Habitat Management Plan presents a set of procedures designed, in part, to mitigate the loss of riparian habitat values through the cumulative effects of past activities. The management strategies contained in the HMP are designed to avoid or minimize adverse environmental impacts as much as possible. The HMP places special emphasis on the protection and enhancement of riparian vegetation and habitat for threatened and endangered species. For example, restrictions on use activities in riparian areas that contain potential habitat for the southwestern willow flycatcher are designed to mitigate past actions that have degraded natural riparian vegetation.

Management actions described in Table 1, as well as those indicated from monitoring observations, will be implemented using the best available management practices as described in Table 2. The management actions address the need to restore and maintain riparian ecosystem conditions. None of the management actions include tasks that could potentially degrade riparian conditions. In addition, ongoing monitoring and adaptive management enable the Taos Field Office to proactively respond to changing conditions and to mitigate unforeseen events.

## **MONITORING AND ENFORCEMENT**

Monitoring protocols are prescribed for each identified riparian area (Table 1) and adaptive management strategies are designed to adjust management actions to meet riparian habitat objectives. Similarly, monitoring will provide information relative to the effect of other use authorizations that may affect or alter riparian management objectives.

Generally, monitoring activities follow standard procedures outlined in BLM guidance manuals, including photopoints, green line surveys, proper functioning condition (PFC) surveys, and if suitable habitat is present, yearly threatened and endangered species surveys. All monitoring will be conducted according to schedules that reflect the conditions currently found within individual riparian areas. Riparian areas that are currently classified as not in PFC will receive more frequent and intensive monitoring than areas that are at PFC and not threatened by other use activities. Riparian areas subject to seasonal grazing will be monitored to determine whether domestic livestock grazing is impacting riparian habitat.

## **CONCLUSION**

This Record of Decision constitutes the final BLM action on approving the EIS for Riparian and Aquatic Habitat Management in the Taos Field Office - New Mexico. Copies of this Record of Decision are available on request from the BLM, Taos Field Office, 226 Cruz Alta Road, Taos, NM 87571-5983 or from the New Mexico State Office, Division of Resources, 1474 Rodeo Road, Santa Fe, NM 87505-1689.

**TABLE 1 Current Management Actions and Adaptive Management Tasks for the Riparian Areas Administered by the Taos Field Office<sup>a</sup>**

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks				
		Survey and Analyze Riparian Areas	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, if Necessary
Canadian River	No tasks or projects have been completed, domestic livestock grazing, evidence of OHV use.	PFC rating: NF (1994)	Develop domestic livestock grazing agreement that is protective of the riparian area. Collect data on the current condition of the riparian area. Exclude OHV use in riparian area.	Implement condition and trend monitoring to re-evaluate PFC. Develop and implement a grazing agreement that explicitly protects riparian habitat by 2001. Notify OHV users of riparian use restrictions.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Carrizo Creek	No tasks or projects have been completed, domestic livestock grazing, evidence of OHV use.	PFC rating: NF (1994)	Develop domestic livestock grazing agreement that is protective of the riparian area. Collect data on the current condition of the riparian area. Exclude OHV use in riparian area.	Implement condition and trend monitoring to re-evaluate PFC. Develop and implement a grazing agreement that explicitly protects riparian habitat by 2001. Notify OHV users of riparian use restrictions.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Chico Creek	No tasks or projects have been completed, domestic livestock grazing, evidence of OHV use.	PFC rating: Fair (1989) NF (1994)	Collect data on the current condition of the riparian area. Develop domestic livestock grazing agreement that is protective of the riparian area. Exclude OHV use in riparian area.	Implement condition and trend monitoring to re-evaluate PFC. Develop and implement a grazing agreement that explicitly protects riparian habitat by 2001. Notify OHV users of riparian use restrictions.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.



TABLE 1 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks				
		Survey and Analyze Riparian Areas	Define Required Management Actions	Implement Management Actions	Monitor-Management Actions	Modify Management Actions, if Necessary
Cow Creek	No tasks or projects have been completed, domestic livestock grazing.	PFC rating: FAR (1994)	Collect data on the current condition of the riparian area. Develop domestic livestock grazing plan that is protective of the riparian area.	Implement condition and trend monitoring to re-evaluate PFC. Develop and implement a grazing agreement that explicitly protects riparian habitat by 2001.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Lobo Canyon	Fenced in 1998, domestic livestock grazing not allowed.	PFC rating: FAR (1997)	Continue to exclude domestic livestock grazing. Collect data on the current condition of the riparian area. Manage for recovery of SWF habitat.	Implement condition and trend monitoring to re-evaluate PFC. Maintain fences and exclude domestic livestock grazing.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Mora River	No tasks or projects have been completed, domestic livestock grazing.	PFC rating: NF (1994)	Collect data on the current condition of the riparian area. Develop domestic livestock grazing plan that is protective of the riparian area.	Implement condition and trend monitoring to re-evaluate PFC. Develop and implement a grazing agreement that explicitly protects riparian habitat by 2001.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Manueles Creek	No tasks or projects have been completed.	PFC rating: PFC (1994)	Enhance recreational opportunities. Monitor for use by domestic livestock grazing. Collect data on the current condition of the riparian area.	Implement condition and trend monitoring to re-evaluate PFC. Develop and implement a grazing agreement that explicitly protects riparian habitat by 2001.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.

TABLE 1 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks				
		Survey and Analyze Riparian Areas	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, if Necessary
Ojo Caliente (Demonstration Area)	Fenced in 1987, riparian area demonstration project, domestic livestock grazing not allowed.	PFC rating: Poor (1988) FAR (1994)	Monitor riparian pastures No. 6 (North) and No. 7 (South) to determine recovery of riparian habitat. Continue to exclude domestic livestock. Collect data on current condition of the riparian area. Manage for recovery of SWF habitat.	Implement condition and trend monitoring to re-evaluate PFC. Develop and implement a grazing agreement that explicitly protects riparian habitat by 2001.	Reestablish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Ojo Caliente Upper	No tasks or projects have been completed.	PFC rating: FAR (1994)	Collect data on the current condition of the riparian area. Manage for recovery of SWF habitat.	Implement condition and trend monitoring to re-evaluate PFC. Develop and implement a grazing agreement that explicitly protects riparian habitat by 2001.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Ojo Caliente Lower	No tasks or projects have been completed.	PFC rating: FAR (1994)	Collect data on the current condition of the riparian area. Manage for recovery of SWF habitat.	Implement condition and trend monitoring to re-evaluate PFC. Develop and implement a grazing agreement that explicitly protects riparian habitat by 2001.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Rio Cebolla	Fenced on east side of riparian area, domestic livestock grazing excluded, evidence of OHV use.	PFC rating: PFC (1994)	Collect data on the current condition of the riparian area. Exclude OHV use in riparian area. Manage for recovery of SWF habitat.	Notify OHV users of riparian use restrictions.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.

**TABLE 1 (Cont.)**

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks				
		Survey and Analyze Riparian Areas	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, if Necessary
Rio de los Pinos	No tasks or projects have been completed, evidence of OHV use, domestic livestock grazing excluded, recreational fishing.	PFC rating: FAR (1994)	Continue to collect data on the current condition of the riparian area. Exclude OHV use in riparian area. Evaluate for recreational opportunities. Manage for recovery of SWF habitat. Evaluate land ownership.	Implement condition and trend monitoring to re-evaluate PFC. Develop grazing agreement that explicitly protects riparian habitat by 2001. Notify OHV users of riparian use restrictions. Evaluate recreational opportunities. Identify BLM boundaries.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Rio Medio	No tasks or projects have been completed, domestic livestock grazing.	PFC rating: FAR (1994)	Develop domestic livestock grazing plan that is protective of the riparian area. Collect data on the current condition of the riparian area.	Implement condition and trend monitoring to re-evaluate PFC. Develop grazing agreement that explicitly protects riparian habitat by 2001.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Rio Nutrias	No tasks or projects have been completed, grazing prohibited.	PFC rating: FAR (1994)	Collect data on the current condition of the riparian area.	Implement condition and trend monitoring to re-evaluate PFC. Continue to exclude domestic livestock grazing.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Rio Quemado	No tasks or projects have been completed, evidence of OHV use, domestic livestock grazing.	PFC rating: PFC (1994)	Collect data on the current condition of the riparian area. Determine extent of domestic livestock grazing. Exclude OHV use in riparian area.	Implement condition and trend monitoring to re-evaluate PFC. Develop grazing agreement that explicitly protects riparian habitat by 2001. Notify OHV users of riparian use restrictions.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.

TABLE 1 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks				
		Survey and Analyze Riparian Areas	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, if Necessary
Rio San Antonio	Water gaps installed in 1995, domestic livestock grazing excluded.	PFC rating: FAR (1994)	Collect data on the current condition of the riparian area.	Implement condition and trend monitoring to re-evaluate PFC.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Rio de Truchas	Dormant season grazing only, closed to sand and gravel mining in 1994, evidence of OHV use.	PFC rating: FAR (1994)	Monitor the effects of domestic livestock grazing on SWF habitat. Collect data on current condition of the riparian area. Manage for recovery of SWF habitat.	Implement condition and trend monitoring to re-evaluate PFC. Monitor grazing activity to ensure that riparian protection is highest priority and that SWF habitat is not compromised.	Continue to take photopoints.	Use the results of the monitoring to adjust current management, if necessary.
Santa Cruz Lake	No grazing allowed, evidence of OHV use, recreational opportunities.	PFC rating: U (1994)	Continue to exclude domestic livestock grazing, exclude OHV use in riparian area, evaluate recreational opportunities.	Implement condition and trend monitoring to re-evaluate PFC. Continue to exclude domestic livestock. Notify OHV users of riparian use restrictions. Evaluate recreational opportunities.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Santa Cruz River, Above Lake	Grazing not allowed since 1998, hiking and fishing opportunities.	PFC rating: PFC (1994)	Continue to exclude domestic livestock grazing. Collect data on the current condition of the riparian area. Manage for recovery of SWF habitat.	Implement condition and trend monitoring to re-evaluate PFC. Continue to exclude domestic livestock. Evaluate recreational opportunities.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.

**TABLE 1 (Cont.)**

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks				
		Survey and Analyze Riparian Areas	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, if Necessary
Santa Cruz River, Below Dam	No tasks or projects have been completed (project plan for 2000), evidence of OHV use, domestic livestock grazing.	PFC rating: FAR (1994)	Collect data on the current condition of the riparian area. Exclude livestock grazing. Exclude OHV use in riparian area.	Implement condition and trend monitoring to re-evaluate PFC. Develop grazing agreement that explicitly protects riparian habitat by 2001. Notify OHV users of riparian use restrictions. Evaluate recreational opportunities.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.
Santa Fe River	Fencing to exclude trespass domestic livestock grazing. Exclusion fences completed January 2000.	PFC rating: NF (1994)	Domestic livestock grazing will be excluded from the riparian area. Collect data until recovery occurs. Thereafter, dormant season grazing may occur with limitations on levels of use. Manage for recovery of SWF habitat.	Implement condition and trend monitoring to re-evaluate PFC.	Establish photopoint.	Use the results of the monitoring to adjust current management, if necessary.

<sup>a</sup> FAR = Functional-at risk; NF = nonfunctional; OHV = off-highway vehicle; PFC = proper functioning condition; SWF = southwestern willow flycatcher; U = unknown.

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**TABLE 2 Riparian Area Management Practices**

Practice	Objective	Comment
Fencing	Isolate degraded habitats.	Consider big-game migration, public access, beaver activity, falling trees, and vehicles.
Prescribed burns	Modify vegetation communities.	Primarily for upland areas; avoid areas of special concerns (endangered species).
Forestry practices	Improve vegetation communities.	Cover or canopy manipulation of coniferous stands, woody debris, or slash management.
Vegetation plantings	Reestablish native communities.	Cuttings work well for woody vegetation; make sure end is below water table; transplant in enhanced soil; seed in fall and spring; rake after application.
Opportunities from mineral activities	Mitigate mineral exploitation.	Reclamation to avoid material runoff or drainage; riparian habitat development in association with evaporation ponds; water spreaders to collect increased runoff from road construction.
Structures	Control erosion.	Riprapping banks, gradient restoration, water energy-transfer structures, gully plugs, spring developments, removal, or modification of channelization structures, etc.
Beaver complex cycling	Transform pioneer woody vegetation into riparian community.	Cycling of beaver complexes; special management to maximize vegetation regrowth rates; maximize initial construction population followed by reductions for maintenance levels.
Bank stabilization	Accelerate soil and water conservation efforts.	Anchoring green trees (or discarded Christmas trees) into banks; log structures (10–12 in. diameter) at base of bank; gabions (must exceed size of net) or riprap (24 in.).
Recreation planning	Protect, manage, and improve habitats.	Maintain a presence; retain vegetation; locate sites outside of riparian areas; prohibit vehicles from stream access; plant dense vegetation to screen and reduce use of sensitive areas; install signs; designate sites within riparian areas.
Road relocation, construction, and maintenance	Protect, manage, and improve habitats.	Locate outside of riparian area; prohibit vehicles from leaving roads; install signs; minimize impact to streambank and vegetation; revegetate disturbed areas; design and maintain culverts to allow fish passage and free debris flow; haul waste material away; control runoff velocities and sediment transport.
New well pad construction	Protect, manage, and improve habitats.	Locate outside of riparian area and 100-year floodplain for ephemeral washes.
Public education	Provide information to public land users on protection methods.	Develop environmental education and interpretative displays designed to modify visitor or user behavior in or adjacent to riparian areas.